

## Stick Insects in Baltic Amber

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### Abstract

This paper summarizes the knowledge of Phasmatodea in Baltic Amber. Samples of all taxa are figured. A key to subfamilies, tribes, genera and species is included.

### Key words

Phasmida, Phasmatodea, Archipseudophasmatidae, Baltic Amber.

This paper summarizes a recent publication about stick insects in Baltic amber (Zompro, 2001). The Baltic amber developed in the forests of the Baltic region of the Eocene more than 40,000,000 years ago. Only three species of phasmids have been described previously; all descriptions were based on nymphs though.

The majority of the stick insects in Baltic amber belong to the extinct family Archipseudophasmatidae. This family is closely related to the Recent Pseudophasmatidae. Further research is in progress: the results will be published by the author in another paper, after a revision of the Heteronemiidae and Pseudophasmatidae. The relationship to the South East Asian Heteropterygidae, which are also being revised by the author at present, is not clear; the Archipseudophasmatidae lack the ventroapical spine of the area apicalis and sensory areas on the prosternum which are present in Heteropterygidae, furthermore, all specimens examined lack spines on the body and are very slender and not spinose and broad like the Heteropterygidae. The relationship to the Asian group Aschiphasmatae is also unclear. They have been allotted family rank by Bragg (2001) based on wing venation and usually the presence of serrated claws, a trait not exhibited by any specimen examined from Baltic amber.

The Archipseudophasmatidae feature several characters which are not found in any Recent phasmid:

- The tegmina are fully developed, as long as the alae and covering the full length of the abdomen.
- The third antennomere is strikingly elongated and at least twice as long as the length of scapus and pedicellus combined.

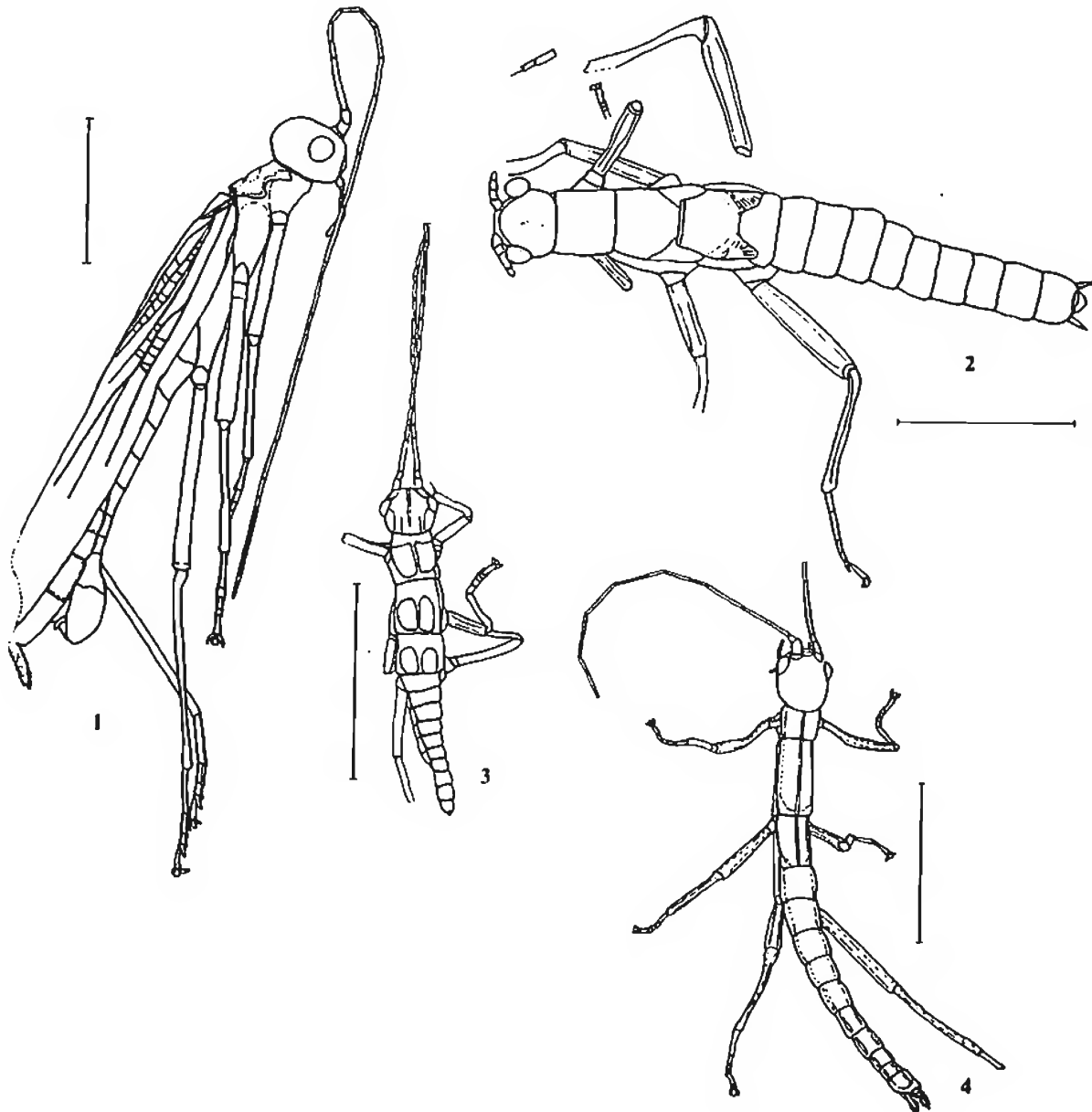
It includes two subfamilies, the Archipseudophasmatinae and an unnamed second subfamily, the latter being only recorded from young nymphs which are useless to describe and name.

The Archipseudophasmatinae feature profemora which are straight basally. They are divided into two tribes. The Archipseudophasmatini are characterized by their basitarsus, which is distinctly longer than the first two tarsomeres combined. There are two genera. *Archipseudophasma* Zompro, 2001 is easily recognizable by the structured pronotum, which exhibits lateral margins which are deeply concave in the middle; the probasitarsus is as long as the following four segments combined. It includes only one species, *Archipseudophasma phoenix* Zompro, 2001, known from two adult males. *Pseudoperla* Berendt & Pictet, 1854, features a flat and almost quadrate pronotum. The probasitarsus is at best as long as the following three tarsomeres combined. It includes *Pseudoperla gracilipes* Pictet & Berendt, 1854, known from a male nymph of stage IV.

The second tribe, Balticophasmatini, features a probasitarsus which is shorter than the following two segments. It includes the genus *Balticophasma* Zompro, 2001, with the only species *Balticophasma lineata* (Pictet & Berendt, 1854). The nymphs are easy to recognize by two strongly sclerotized "plates" on the thoracic segments.

The unnamed second subfamily features profemora which are compressed and curved basally. It includes strongly elongated phasmids, with long, slender legs. The edges of the

femora and the tibiae bear long bristles. As it is only known from nymphs, a naming is useless.



**Figures 1-4.**

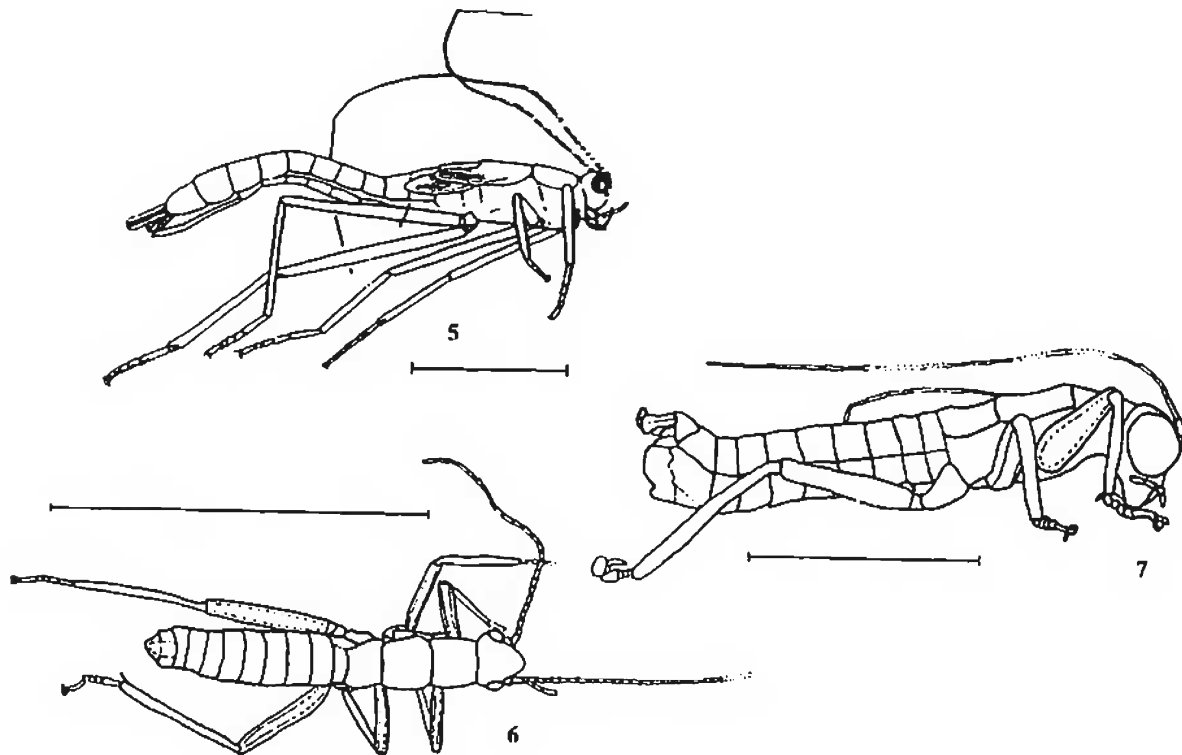
1. *Archipseudophasma phoenix* Zompro, 2001. The holotype, an adult male.
2. *Pseudoperla gracilipes* Pictet & Berendt, 1854. The holotype, a male nymph of stage IV.
3. *Balticophasma lineata* (Pictet & Berendt, 1854). The holotype, a nymph of stage II of undetermined sex.
4. The second, unnamed subfamily. A young nymph of undetermined sex.

The Pseudophasmatidae are present in Baltic amber by *Electrobaculum gracile* Sharov, 1968, belonging to the Pseudophasmatinae: Electrobaculini. Members of this group are very rare in Baltic amber.

Only very few specimens are recorded from the suborder Anareolatae, which includes the majority of the genera and species today. The young nymphs do not allow further conclusions.

#### Key to subfamilies, tribes and genera of Archipseudophasmatidae

1. Profemora straight, not or only slightly depressed basally. Archipseudophasmatinae..2
  - Profemora distinctly depressed and curved basally . . . . . Second Subfamily.
2. Basitarsus at least as long as following three segments combined. . . . .
  - . . . . . Archipseudophasmatini..3
  - Basitarsus only slightly longer than second tarsomere. . . . .
    - . . . . . Balticophasmini: *Balticophasma* Zompro.
3. Lateral margins of pronotum straight . . . . . *Pseudoperla* Berendt & Pictet.
  - Lateral margins of pronotum distinctly concave in the middle. . . . .
    - . . . . . *Archipseudophasma* Zompro.



#### Figures 5-7.

5. *Electrobaculum gracile* Sharov, 1968. A female nymph of stage V. After Sharov, 1968.

6. Anareolatae species. A young female nymph.

7. *Raptophasma kerneggeri* Zompro, 2001. The adult male holotype.

#### Other material

About 20 specimens examined by the author did not belong to Phasmatodea, and it is impossible to attach them to any insect order known to science because several characters distinguish them distinctly. The form of the genitalia and the one-segmented cerci place them near the Phasmatodea or Grylloblattodea. Nevertheless, in many characters they do not agree

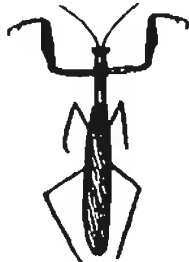
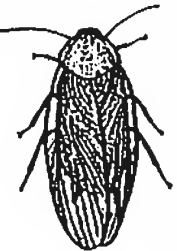
with these groups. In all probability they belong to a new order of insects. They are represented by the genus *Raptophasma* Zompro, 2001, with the only species *Raptophasma kerneggeri* Zompro, 2001. Recently the author discovered an adult male from Tanganyika (1950) and an adult female from Namibia (1909), belonging to a different genus and species. So these striking insects have survived up to our time.

### Acknowledgements

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